TRIP 21

King County
Transportation **R**eform and **I**mprovement **P**lan
for the 21st Century

Background Report
Final Draft

August 2, 2000

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INTRODUCTION

This report documents the components of King County Executive Ron Sims' proposed Transportation Reform and Improvement Plan for the 21st Century, also known as "TRIP 21." TRIP 21 would be funded by a 0.3 percent increase in the local sales tax dedicated to public transportation in King County, raising the total levy of this tax to 0.9 percent upon approval of King County voters (King County currently has voter approval to levy 0.6 percent for public transportation). In most areas of King County, this would raise the overall sales tax rate from 8.6 percent to 8.9 percent. TRIP 21 would finance a number of new major capital improvements by issuing general obligation bonds supported by a portion of the sales tax revenue stream that TRIP 21 would provide, if it is approved by voters.

Why This Program?

The passage of Initiative 695 in Fall 1999 cut King County Metro Transit's motor vehicle excise tax (MVET) funding by about $110 million per year, representing about 29 percent of Metro's total operating funds. In Spring 2000, the Washington State Legislature provided King County with about $36 million in one-time "bridge" funding to allow Metro to continue current levels of operation through March 2001. The Legislature also authorized transit districts throughout the state to ask voters to raise local transit sales tax levies to a maximum of 0.9 percent, providing a means to replace long-term, on-going public transportation funding.

TRIP 21 is designed to respond to what King County residents are saying they want -- more efficient use of existing transportation resources, and both preservation AND enhancement of the transit system.

Efficiencies

Early in 2000, King County cut about 135,000 annual hours of the lowest productivity bus service, representing about four (4) percent of Metro's annual service expenditure, saving about $10 million annually. The Department of Transportation also reduced administrative and support expenditures for 2000 by about $3 million annually, delayed or reprioritized transit capital projects, and spent down emergency reserve funds to maintain service levels while the Washington State Legislature considered both short and long-term options for replacing the lost MVET revenues. Another 149 full-time equivalent positions will be eliminated by the end of 2000, saving an additional $14.6 million annually. TRIP 21 also proposes increasing regular bus fares and paratransit service fares in June 2001 by 25 cents and 50 cents per trip respectively, generating another $12 million annually.

Preservation and Enhance the Transit System

A sales tax increase of 0.3 percent will generate an estimated $120 million annually, which would be used to preserve existing transit service and capital investments AND support service expansion and selected new capital projects. Priority capital and service investments are targeted to enhancing transit capacity and access and improving the quality and efficiency of existing and

new services. The balance of this report details the specific investments that would be made. Major considerations in developing this proposed program of improvements were:

Keep the Buses Moving: maintain current service levels and readiness, and avoid deep service cuts and impacts.

Enhance Bus Service: provide even more bus service than today, building on the success of the recent Six-Year Transit Plan, and growing ridership.

Implement Current Plans: focus on enhancements that have been discussed in the community, have consensus, and that are already recommended in regional and local transportation plans.

Build "Action-Ready" Projects: focus on projects that have already been studied and, in some cases, largely designed, so that they can be implemented quickly. Spend new tax dollars on getting projects on the ground.

Provide Alternatives to Congestion: spend new tax dollars on solutions in the most congested regional corridors in the county to provide maximum benefit to as many people as possible. Provide better public transportation alternatives in those corridors to allow more people to bypass congestion.

Benefit Transit and Other Modes: focus on investments that help public transit, but that also provide benefits for other modes of travel, including cars.

Partnerships

TRIP 21 also moves beyond the traditional approach of limiting the use of King County funds to only King County-implemented improvements. The benefits of TRIP 21 are strengthened and broadened by partnerships with other governments, employers and developers to achieve a program of transportation improvements with regional benefits across jurisdictional boundaries. This program reforms the transportation improvement funding and implementation approach to include partnerships with other government agencies and private entities who are better positioned to deliver certain public transportation services.

Many of the capital improvements in TRIP 21 would be financed in part by King County but implemented by Sound Transit, the Washington State Department of Transportation (WSDOT), or local cities. Examples include the construction of light rail extensions to Northgate and Southcenter by Sound Transit; the construction of the I-90 Bus Rapid Transit, I-5 South Busway/Access Ramp, and I-5/SR 520 Priority Ramp improvements by WSDOT, and the installation of Transit Priority/Traffic Signal Sychronization equipment by cities. Private partnerships are also expected to help with the development of stations and new park and ride capacity on the Northgate and Tukwila light rail alignments.

The Future Without TRIP 21

Without TRIP 21, King County Metro bus service would need to be cut by another 500,000 annual hours per year beyond cuts already made, resulting in more than a 20 percent reduction in

bus service between Fall 1999 and Fall 2001 (about 700,000 annual hours in total). This assumes the additional administrative cuts in 2000 and fare increases in 2001; service cuts would have to be even greater if these efficiencies were not implemented.

The impacts of a service cut of this size would be significant. Over 300,000 riders on an average weekday depend on Metro Transit services for transportation, including about 100,000 afternoon commuters. Over 30,000 additional daily car trips could be added to area roadways as displaced riders shift to other modes. Metro's current customer service satisfaction rate of over 90 percent and household market penetration rate of over 75 percent would undoubtedly drop with a service cut of this size. Further, because the bridge funding provided by the State will only last through the end of first quarter 2001 and all other funding sources will be exhausted by that time, service would have to be cut abruptly. This will impact large numbers of riders in a very short period of time. Beyond the disruption of such a loss of service, it will be very difficult and expensive to rebuild the system because of the long lead times required to buy buses, build operating facilities, and hire and train bus operators. In short, it will take much longer to rebuild the system that it will to cut it back.

What Does The Public Think?

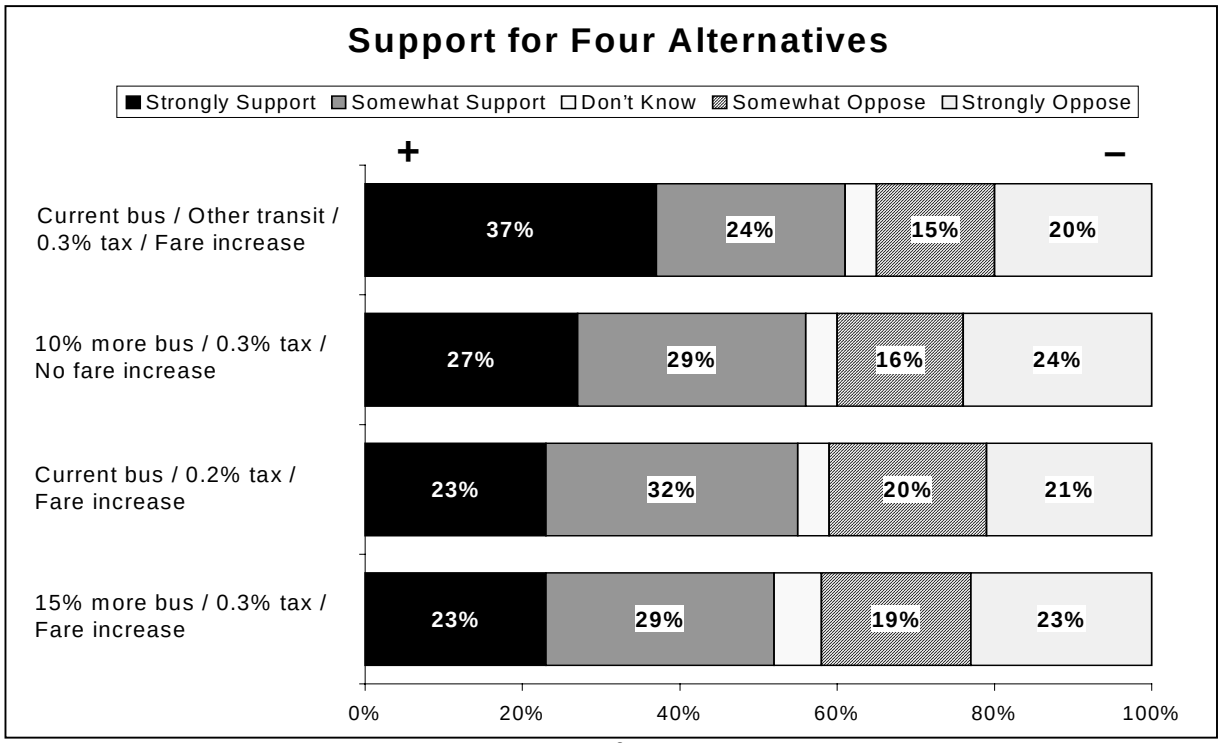
To help determine how to proceed, the County Executive asked the Department of Transportation to research how the public feels about Metro services and different options for funding them. The Department contracted with the Gilmore Research Group to conduct a random household survey across King County. A total of 601 randomly selected residents were interviewed by telephone in May of 2000. The survey has a margin of error of +/- four (4) percentage points. Respondents were asked to indicate their level of support for four public transportation funding alternatives, in addition to other questions:

1. Increase the local sales tax by 0.3 percent and raise fares by 25 cents to maintain existing bus service and provide additional funding for other transit such as light rail or bus rapid transit.
2. Increase local sales tax by 0.3 without a fare increase to maintain existing bus service, and expand service by 10 percent.
3. Increase the local sales tax by 0.2 percent with a 25 cent fare increase to maintain existing bus service, with no service expansion.
4. Increase the local sales tax by 0.3 percent with a 25 cent fare increase to maintain existing bus service, and expand service by 15 percent.

The following are key findings from this survey.

Preferred Funding Alternative

- All four funding alternatives that were read to the respondents garner the support of at least half of the of the people in this survey, but the alternative that includes funding for other mass transit has the most support.
  - 61% support ("strongly" or "somewhat") the alternative involving a 0.3% tax increase, a 25 cent fare increase, the current level of transit, and light rail or bus rapid transit.



- 56% support the 0.3% tax increase with no fare increase and a 10% increase in transit service.
- 55% support the 0.2% tax increase and 25 cent fare increase to sustain the current level of service
- 52% support the 0.3% tax increase and 25 cent higher fare and a 15% bus service increase

  5% strongly support all four alternatives.
  25% strongly or somewhat support all four.
  9% strongly oppose all four
  16% strongly or somewhat oppose all four.

Fare Increase

- The funding alternative with no fare increase receives the most "strong support" among the options that do not include light rail.

- 72% say that fares should not be raised because it would discourage people from taking the bus and make traffic worse; 23% say that riders should pay more so taxpayers can pay less.

Attitudes About Metro Benefits

- 63% of the respondents say that taxpayers do get their money's worth from what they pay for Metro Transit.
- 79% reject the notion that a 25% service reduction would not hurt the area.
- 87% of the respondents say that Metro provides benefits to them and their families, whether or not they are regular bus riders.
  - 68% say that keeping traffic from getting worse is a benefit and 61% say that making it easier and less expensive to go to events is a benefit.

Issues

- 64% say that transportation is one of the top issues facing the county (but not the biggest issue) and 30% say that transportation is the biggest issue; in total, 94% rank transportation as a top issue.
- 48% say traffic makes the area a less desirable place to live, but only 23% say that it has created a hardship.

Equity/Distribution of Service

- 36% think "fair" is providing the most service to the areas with the most ridership and 31% say it is providing the most service to the areas with the worst traffic congestion. 22% choose one of the other two options: 19% choose the areas with the most population and 2% choose the areas with the most tax revenue for transit.
  - When asked to choose between their first option and service to people who have no other way to get around, 51% choose the social equity concept.

- 46% of those who support either funding alternative that provides an increase in bus service want that service directed toward reducing traffic congestion and 35% want it to go toward providing service to people without other means of transportation; 17% volunteered that both need to be included.

Information

- Awareness of the revenue loss and, especially, of the Legislature's action on a local option tax is low.
  - 49% do not know that Metro Transit is losing about one-quarter of its funding, and 88% do not know that the Legislature provided the authority for a local option tax of up to 0.3%.
- 80% say they would want to get information on any potential ballot measure from County government.
- The primary areas of information people say they want are details about how the money will be spent (27%) and details of how the service will be improved (26%).

Metro Transit Ridership

- 33% had taken at least 1 one-way ride on Metro in the previous month.
- 63% have ridden in past year.
- 75% of the households have someone who has used Metro Transit in the past year.

PRIORITY CAPITAL INVESTMENTS

The map on the next page shows the priority capital investments that TRIP 21 would fund, beyond maintenance of systemwide infrastructure expenses that are hard to map, such as fleet, base expansion, and bus zone improvements. Descriptions of each of the individual components/projects follow.

Systemwide Capital Program

Problem: Short-term funding provided by the Washington State legislature in 2000 to "bridge" the funding gap in Metro's budget created by the reduction of the motor vehicle excise tax (MVET) revenues will run out in mid-2001. If a long-term funding source to replace the lost MVET revenues is not secured, transit capital funding levels will drop significantly below today's levels in mid-2001 and continue at significantly lower levels for an extended period. A number of current capital programs would have to be curtailed or delayed in order to maximize funding available to continue bus services. In a number of instances, such actions would require permanent funding cuts and abandoning improvements to key facilities or systems important to the successful operation of the transit system.

Description: Dedicate new sales tax revenue to replace MVET revenues formerly used to maintain the current level of passenger facility maintenance and improvement, critical systems projects like regional fare coordination and automatic vehicle location equipment replacement, fleet procurement and park and ride lot expansion. The 1999 to 2005 Public Transportation Capital Improvement Program (CIP) is projected to cost $879 million. Of this total, over $620 million, or 70 percent, is allocated for the replacement and maintenance of existing fleet and operating facilities. Among the projects included in the CIP are:

Fleet: expand the bus fleet by about 270 vehicles from 2000 to 2006 to meet service needs. The composition of the fleet will shift somewhat in 2000 to include new 30-foot diesel coaches for low/mid-capacity services, and again in 2003 to provide for replacement of dual-powered articulated Breda coaches with a combination of articulated and non-articulated diesel coaches when the bus tunnel closes and is transferred to Sound Transit for light rail service. These changes will allow more flexibility in matching coach-seating capacity with route ridership demand. Additionally, the trolley fleet will be rehabilitated to extend the life of this key urban fleet, and trolley substation enhancements will improve system reliability.

Operating Facilities: The increase in fleet requires the addition of operating and maintenance base capacity that is incorporated in the program. A key element of the program is to provide adequate capacity for efficient system operation over the next 20 years and beyond.

Speed & Reliability: Transit speed and reliability enhancements are planned on a number of key corridors throughout the county. The main feature of the speed & reliability program is installation of transit signal priority technology to provide quicker, more reliable transit operation.

Park & Ride Lots: The Northgate P&R lot will be expanded by about 500 permanent spaces in conjunction with redevelopment of the south parking lot at

Northgate Mall as part of King County's transit-oriented development project in Northgate. Additional part-time spaces will be provided through lease arrangements with the mall's owners. The CIP also includes construction of a new 600-850 space P&R lot on Pacific Highway S. near S. 272nd Street in Federal Way, and funding to expand the Eastgate P&R lot (even more spaces will be built as part of the I-90 BRT project).

Passenger Facilities: The shelters and passenger facilities' comfort, safety and access program continues throughout the period, addressing the highest priority passenger facility maintenance and improvement needs.

Systemwide Projects: Other critical systems projects that will be continued include the regional fare coordination project, paratransit van mobile data terminals, on-board CCTV security enhancements, and bus radio and automatic vehicle locator (AVL) replacement projects.

Benefits:

- Continued replacement of aging vehicles with more versatile and cost effective fleets ensures that buses are available at the right times to continue to provide current service and support service expansion while improving business efficiency.
- Operating base expansion efforts could enable scheduling efficiencies that capture the equivalent of over 30,000 annual service hours.
- Business and transit systems and asset maintenance elements support successful, high quality operation of public transportation services and facilities that Metro customers have come to expect.
- Avoids degrading existing transit facilities through inattention, and enables continued replacement and improvement of bus stops, transfer points, transit centers, etc.
- Allows important systemwide technology improvement projects to continue, supporting increased customer convenience and business efficiency.
- Park and ride expansion alleviates parking overcrowding and spillover into adjacent neighborhoods at over-loaded lots.
- Northgate P&R expansion supports transit-oriented re-development and access to light rail

Cost: $879,000,000[1] from 1999-2005, supported by $80 M sales tax revenue stream.

[1] KC Metro, 1999-2005 Capital Improvement Program, 1999

Countywide Transit Priority/Traffic Signal Synchronization

Problem: The majority of the transit service in King County is along the primary network of arterials, also known at the regional arterial network (RAN). The economic success and quality of life in the region is directly dependent on being able to efficiently move people, goods and services and take full advantage of transit's capacity to attract more riders. If the arterials become clogged, service along these can be disrupted, resulting in delays for transit, general traffic, and freight and goods movement. These disruptions also create transit schedule unpredictability that is a major deterrent to maintaining existing and attracting new transit riders. Many of these corridors are also in need of lighting and passenger amenities to make these arterials more secure, pedestrian friendly and attractive to transit riders.

Description: This project will re-time traffic signals and/or upgrade selected signal control e and transit signal priority (TSP) equipment using the latest "intelligent transportation systems" (ITS) technology. Fifty-four primary arterial transit corridors involving over 700 traffic signals running in 19 jurisdictions throughout King County are included in the project (see map following this project description). Patterned after the recent transit initiative launched between Seattle and King County, the project focuses on streets that carry substantial volumes of people in cars and buses. The project will incorporate special detection and a toolbox of minor improvements that allow traffic signals to selectively prioritize bus movements without disruption to traffic flows, and includes upgrades for transit passenger access and facilities in some corridors.

The project will build on the success of Metro's recent test project on the Rainier Avenue South corridor. It will begin to implement the transit priority technologies agreed to and in partnership with King County local governments, creating a cohesive regional system of locally-controlled traffic signals. Major components of the project are:

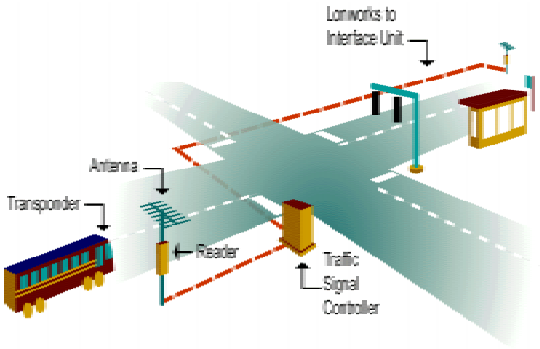
Signal Control Upgrades: To support real time traffic control and TSP, the traffic controller must be capable of providing the necessary functions to deliver the operational benefit. This information, combined with handling of a priority request for transit, will allow real time adjustments to signal timing. This project will support upgrades to a more sophisticated controller with these features. Upgrades to a superior traffic controller have the additional benefit of providing advanced programming and operational control that is needed for improvements to general traffic flow. This project will also support common controller technologies to be used along arterials in order to encourage system integration and coordination across jurisdictional boundaries.

Detection System and Video Camera Monitoring Upgrades: This component will provide additional detection needed to maximize the capabilities and efficiency of

the traffic control network. Detection systems for both vehicles and pedestrians provide input to the traffic controller. This information is used to make control decisions such as what direction of traffic should served and how long to serve the green phase. Without the detection, the signals will not react to traffic and appear sluggish. Some of the more advanced systems use this detector information as a prediction tool to measure increasing traffic demand in order to change to signal timing patterns to accommodate peak hour traffic. The traffic network will include video cameras for monitoring traffic conditions, and for providing real-time traffic information accessible on the Internet.

Communication System Upgrades: This component will enhance the ability of the individual traffic control systems to communicate with each other and provide the needed infrastructure for the TSP system. Traffic controllers and TSP field devices need to be interconnected in order to exchange data with other field devices and with operation and management centers. Many individual traffic control systems have existing communication networks. However, improvements are needed in the following areas: communications between individual traffic control sub-systems (across jurisdictional boundaries); communications for the proposed TSP network; missing links in existing traffic control systems; and communication from the field to the operation and management centers.

Signal Retiming: Signal coordination is the concept of synchronizing the traffic lights along a corridor to minimize delay and the number of stops you have to make. As traffic patterns change and traffic volumes increase the signal timings need to be updated. Generally, these timings need to be revised every three years or so to keep up with the changing traffic conditions. To accomplish signal coordination, the signals need to be able to communicate with each other, generally through physically interconnecting each of the intersections with communications cable creating a system of traffic signals. This system provides opportunities to manage traffic on a corridor or network level and is capable of realizing significant benefits.



Transit Signal Priority: This component will provide a regional TSP system that becomes fully integrated with normal traffic operations along primary transit corridors. TSP is a system of detecting a bus in the flow of traffic and providing a request for more “green time” for the transit vehicle as it travels within the general traffic stream. TSP provides an advantage to the bus, but is not disruptive the way an emergency vehicle can be when it requests a green light at an intersection. Physically, buses are equipped with an electronic tag that can be read by a radio antenna placed in advance of a traffic signal. Once

a bus is detected it sends a data message with information about the bus, including the bus route, number of passengers and schedule information. If the bus then meets the requirements set by the Traffic Engineer, a request for priority will be sent to the traffic signal and the light will remain green and/or quickly return to green for the requesting bus. In addition to this element, minor improvements will be made within existing right of way to facilitate bus flow along these corridors such as bus stop modifications, parking management and other lower cost operational improvements.

Pedestrian and Passenger Amenities: As corridors are selected for implementation attention will be given to upgrading lighting, passenger and pedestrian facilities in an attempt to make it easier and more attractive for riders to walk to bus stops. Improvements may include sidewalk repairs, bus zone and shelter enhancements, pedestrian lighting, rider information and other amenities that can be supported in partnership with local jurisdictions.

Real-Time Traffic Signal Control: Upgrades to the controller, detection and communications links will begin to lay the foundation for the most advanced traffic signal systems being developed to date. Several jurisdictions are interested in applying resources from this project to selected transit corridors in an effort to concentrate efforts to develop real time adaptive signal control systems. These systems require a very extensive communication and detection backbone. King County has partnered with the Washington State Department of Transportation who is in the process of locally demonstrating this technology on SR 522. Much of the equipment has been put in place, and if the control strategies prove to be cost effective, it will lay the foundation for concentrated efforts on selected corridors that could deliver optimal traffic and transit benefits. The City of Seattle identified up to 12 corridors that may be candidates for this technology and, combined with improvements to passenger amenities, will become a more focused effort.

Benefits:

- Reduces the need for major, expensive right-of-way acquisition and road widening efforts.
- Provides necessary capital improvements to enhance both traffic and transit operations, optimizing signal control to provide maximum people moving capability.
- Reduces signal related stops, average transit signal delay, intersection average person delay and bus travel time variability for prioritized buses. Reports

from a similar project in California[2] which involved retiming nearly 2,000 traffic signals in 31 jurisdictions demonstrated up to a 13 percent reduction in delay, 12 percent reduction in stops, and an eight (8) percent reduction in fuel use – yielding a cost benefit ration of 53:1. Preliminary findings from Metro's test of signal priority technology in the Rainier Avenue corridor of south Seattle show a similar or better reduction in the number of transit stops and delay, with minimal impacts to general purpose traffic.

- Implements technology accepted by traffic engineers from around the region, improving traffic detection and communication integration among different systems on in combination with local traffic control strategies.
- Maximizes the productivity and cost effectiveness of existing transit service, and protects against the future degradation in transit service quality along the RAN.
- Encourages modal shift from the single passenger car to transit.
- Reduces vehicle emissions and fuel consumption through minimizing stops, delay and travel time.
- Provides enhanced traveler information and traffic management capability.
- Improves incident response times.

Cost: $50,000,000[3] total from new bonded revenue stream
To be used in partnership with local jurisdictions' contributions:
$25,000,000 West planning subarea (up to 360 intersections)
$14,000,000 South planning subarea (up to 200 intersections
$11,000,000 East planning subarea (up to 150 intersections)

[2] Caltrans, Fuel Efficient Traffic Signal Management Program, 1986/87
[3] KC Metro, Speed & Reliability group estimates, 2000

I-90 Bus Rapid Transit

Problem: The I-90 Center Roadway provides a fast, reliable routing for buses and other HOV's, but only in the "peak" direction (westbound in the morning, eastbound in the afternoon). At other times and in other directions, buses have no preference over other traffic and are delayed by slowdowns and day-to-day traffic variability, resulting in slower rider travel times, less predictable schedule performance, and higher bus operating cost. This situation is forecast to worsen considerably over time. Also, park and ride lots along the I-90 Corridor currently average over 100 percent utilization. Overcrowded park and rides have reduced potential transit ridership and resulted in parking "spillover" in several neighborhoods.

Description: Sound Transit, King County Metro, the Washington State Department of Transportation and local jurisdictions are currently developing plans to provide reliable *two-way* transit operations along the I-90 Corridor, to be financed by Sound Transit. Two alternatives are currently being considered:

Alternative R-2b "Modified": this alternative would convert the I-90 reversible center roadway to two-way operation, limited to transit and HOV use. This would require adding freeway width across Mercer Island and removing the barrier between the westbound transit/HOV and general purpose lanes on the floating bridge to allow room for passing in the event of an accident or breakdown. This alternative would remove Mercer Island general purpose traffic from the center roadway.

Alternative R-8: this alternative would revise the configuration of the I-90 reversible center roadway to provide one transit/HOV lane and one general purpose traffic lane. The outer general purpose roadways would continue to have three general purpose lanes in each direction, with lanes and shoulders narrowed to provide width for a new all-day inside transit/HOV lane in each direction. This alternative would allow Mercer Island general purpose traffic continued use of the center roadway.

The King County-financed I-90 BRT project will support either selected I-90 center roadway reconfiguration by making several complimentary improvements along the I-90 corridor between Issaquah and Seattle. This project will construct transit/HOV ramps to/from the center lanes of I-90 at 77th and 80th Streets to provide direct transit/HOV access to/from the Mercer Island P&R lot and transit center. State-of-the-art bus rapid transit stations will be constructed at the Mercer Island, Eastgate, Issaquah and Issaquah Highlands park and ride lots in conjunction with expansion of those lots, including: improved shelters; security;; customer information; other rider amenities; possibly automated fare collection. An I-90 bus terminal facility will be constructed at the International District station of the downtown Seattle transit tunnel to make bus-light rail transfers easy for I-90 riders when light rail service begins.

Over 2,000 new park and ride spaces will be constructed along the corridor. The Eastgate and Issaquah P&R lots will be expanded by over 700 and 300 stalls respectively in new parking garages at each lot. The Mercer Island P&R lot will be expanded by an additional 200-250 stalls beyond the 230 stall garage expansion that Sound Transit is funding. A new 900+ space Issaquah Highlands P&R lot will be constructed to serve the Sammamish Plateau.

The project will also implement about 45,000 annual hours of new Metro bus service in the I-90 corridor to support the park and ride expansion, building on new regional bus service being implemented by Sound Transit in the I-90 corridor. This service is more fully described under Systemwide Bus Service Maintenance and Growth service priorities. A portion of the service required to support I-90 park and ride expansion would be funded through system service hour growth, with the remainder of funded by this project.

The I-90 center roadway modifications and most of the park and ride expansion projects have been identified as priorities by the Eastside Transportation Partnership as part of their Mobility Action Priorities.

These capital and service improvements also compliment and will be further strengthened by other HOV facility improvements currently planned in the corridor, including direct HOV access ramps connecting the I-90 HOV lanes with the Eastgate Park and Ride lot, and arterial HOV lanes on SR-900 between I-90 and the Issaquah Park and Ride lot. HOV bypass lanes are also planned for the new I-90/Sunset Interchange, which will enhance transit and HOV access to the new Issaquah Highlands Park and Ride lot.

The maps and drawings that follow this project description help to illustrate which communities would benefit from this project. The park-and-ride lot catchment area maps show the potential areas that would benefit from park-and-ride lot expansion or new construction, based on current demand patterns. A conceptual design for the International District bus-rail transfer station is also included.

Benefits:

- Full-time, two direction transit priority on I-90 between I-405 and Seattle will provide significant travel time and reliability advantages for over 2,600 current weekday transit riders living and working on both sides of the lake.
- State-of-the-art bus stations will help to make transit more attractive to more riders.
- Transferring bus riders to light rail at International District Station will provide I-90 riders a direct, convenient link to the regional rail system and enhanced access to regional activity centers such as First Hill, the U District, Northgate, Southcenter, and Sea-Tac Airport.
- The IDS bus-rail transfer could also speed I-90 riders' trips through downtown Seattle, and reduce downtown Seattle peak hour bus volumes

- Adding more than 2,000 park and ride spaces will more than double total permanent P&R capacity in the I-90 corridor, accommodating the equivalent of one freeway lane of auto capacity
- New P&R spaces will help alleviate overcrowding and spillover neighborhood parking, and intercept more I-90 traffic before it reaches critical choke points and congested segments of the corridor, reducing congestion until freeway volumes again build to use up available capacity
- P&R expansion allows existing commuter services to be enhanced and new services to be added to new markets (e.g. Bellevue, Overlake).
- Faster, more reliable bus operations could save operating funds that could be re-allocated to other Eastside transit service.

Cost: $111,000,000 total from new bonded revenue stream[4]

$40,000,000 for transit ramps, stations and IDS bus facility
$45,000,000 for P&R expansion
$26,000,000 over 25 years to support expanded P&R bus service (enough to support about 17,000 hours per year over and above service added through system growth)

[4] KC Metro and WSDOT estimates

Link Light Rail: Northgate Extension

Problem: The University District terminus for LINK light rail falls short of maximizing regional system access and ridership benefits of Phase I light rail. It also fails to address downtown Seattle concerns over volumes of buses on surface streets once LINK is operating in the downtown transit tunnel. The terminus creates the potential to exacerbate already-difficult traffic conditions in the University District, and will be a difficult place to make large volumes of bus-rail transfers.

Description: Extend LINK light rail from the University District to Northgate in Phase I in conjunction with State contributions and savings from Link construction and operations on other parts of the system. Extension of light rail to Northgate is a part of the region's Metropolitan Transportation Plan, the Regional Transit Plan and the Seattle Comprehensive Plan.

The maps that follow this project description show potential light rail alignments between the U District and Northgate, and areas that would benefit from enhanced bus access to light rail at the Northgate and Roosevelt stations.

Benefits:

- Enables Metro to restructure all Shoreline and some northwest Seattle bus services to access LINK, significantly increasing access of the relatively large North Seattle and Shoreline rider markets.
- Increases LINK daily system ridership by 15 percent from 108,500 to 125,000.
- Decreases downtown Seattle peak hour bus volumes, addressing traffic and business impact concerns of the Downtown Seattle Association and others. Restructuring Metro services around LINK could drop peak hour surface bus volumes by 50-75 buses, approaching the current level of bus activity in downtown (not including possible CT reductions if buses fed to Northgate).
- Improves transit access to First Hill, the U District, Sea-Tac Airport and other regional destinations for all King County residents north of the University District.
- Enables Metro to reallocate and reinvest up to 50,000 more annual hours of bus service in Seattle and North King County neighborhoods beyond reinvestment possible by terminating LINK at the University District (currently estimated at 150,000-200,000 hours systemwide).

Cost: $320,000,000 from new bonded revenue stream
Available for whichever LINK alignment is chosen by the Sound Transit Board, paired with additional funding committed to by the State legislature, and construction, vehicle and insurance savings from the LINK program, to enable full funding of an extension and stations.

Link Light Rail: Southcenter Alignment

Problem: Due to funding constraints, the Sound Transit Board was unable to select a light rail alignment through Tukwila that provides direct access to the urban center at Southcenter, and increases ridership. The chosen SR-99 alignment also has traffic, economic and community impacts deemed unacceptable by Tukwila.

Description: Fund most of the incremental difference in cost between Sound Transit's locally-preferred light rail alignment alternative on SR-99, and Tukwila's preferred alignment on Martin Luther King Jr. Way S. (MLK), between S. Norfolk Street and S. 154th Street. Funds would also be available for the SR-599 alignment currently under Sound Transit review, should that alignment be selected. Costs for stations in Tukwila would be deferred or paid for by Sound Transit or other funding partners. This project is consistent with Vision 2020, the region's growth management plan.

The maps that follow this project description show potential light rail alignments between the Henderson Street and S. 154th Street stations proposed as part of this program, and areas that would benefit from enhanced bus access to light rail at the Southcenter station(s).

Benefits:

- Improves regional access to and from the Southcenter area of Tukwila, a designated Vision 2020 regional urban center. For example, it would provide better access to Kent and Renton industrial areas for commuters from Seattle and North King County.
- Addresses long-standing Tukwila concerns about the proposed SR-99 Link alignment.
- By 2020, boardings in Tukwila on the MLK alignment would be about 20 percent higher than the boardings on the SR-99 alignment (4,800/day v. 4,000/day), and systemwide boardings on LINK light rail would increase by about 2,900 riders per day.
- Improves integration of Green River valley bus service with rail, and allows King County Metro to re-allocate more bus service investment within South King County than the SR-99 alignment would allow.
- Enables Metro to reallocate and reinvest up to 15,000 more annual hours of bus service in South King County neighborhoods than would be possible with LINK on SR-99.

Cost: $120,000,000[5] from new bonded revenue stream
(Stations would cost an additional ~ $30,000,000-$50,000,000)

[5] Sound Transit, Central Link Light Rail FEIS, 1999

I-5/Industrial Way Transit Ramp & Busway Extension

Problem: All I-5 buses that access downtown Seattle via the E-3 Busway encounter delay as they get on and off of I-5 at South Spokane Street. It takes several minutes to weave across the general purpose lanes between the entrance/exit and the inside HOV lanes.

Description: Extend the E-3 Busway from Spokane Street to Industrial Way, and construct transit-only ramps to/from the I-5 center HOV lanes. This project was rated as one of the most highly effective HOV direct access projects in WSDOT's Puget Sound HOV Pre-Design studies.

The maps that follow this project description illustrate the proposed ramp and busway extension concept, and areas that would benefit from faster bus access to/from downtown Seattle.

Benefits:

- All Busway routes, including Metro routes from Renton, Kent, Tukwila, SeaTac, Star Lake and Federal Way and Sound Transit routes from Pierce County, would save 3-5 minutes of travel time per trip.
- Benefits over 6,700 current daily Metro bus riders[6] in the I-5 South corridor. Time savings could be over 20 hours per rider per year if all riders enjoyed the maximum estimated time savings.
- Faster and more reliable operation through this corridor would reduce bus operating costs.
- Improves safety and reduces operating time by eliminating bus weaving across traffic from/to the left side I-5 HOV lane to the right side Spokane Street exit/entrance ramps.

Cost: $60,000,000[7] from new bonded revenue stream

[6] KC Metro, Automatic Passenger Counter data, Fall 1999
[7] KC Metro estimate based on previous 1996 WSDOT Puget Sound HOV Pre-Design Study estimate

SR-520/I-5 Priority

Problem: The connection between I-5 and SR-520 is a commonly recognized regional bottleneck. The express lanes are unavailable to transit routes that use SR-520 as there is no connection between them, and buses get stuck in I-5 mainline congestion along with other traffic. Transit operations between downtown Seattle and SR-520 are significantly compromised by the lack of facilities to improve bus operating speeds and service reliability for routes serving the SR-520 corridor northern Eastside communities including Woodinville, Juanita, Kirkland, Totem Lake, Bear Creek, Redmond, Bellevue and Overlake.

Description: Construct reversible ramp access from SR-520 to the I-5 express lanes for use by transit only, or by transit and HOVs, subject to traffic analysis. Construct a northbound right side curb transit or transit/HOV lane on the I-5 mainline between the Olive Way on-ramp and SR-520 off-ramp. Implement both components in conjunction with projects recommended by the Trans-Lake Washington Study. This project was rated as the most highly effective freeway-to-freeway HOV connection in the region in WSDOT's Puget Sound HOV Pre-Design studies.

The maps that follow this project description illustrate the proposed ramp and lane concept, and areas that would benefit from faster bus access to/from downtown Seattle.

Benefits:

- The reversible HOV ramp between SR-520 and the I-5 express lanes would provide SR-520 routes faster peak direction access to downtown Seattle during peak travel periods.
- Up to 2,500 daily weekday Metro riders[8] on buses using the ramp could save up to 5 minutes inbound in the morning, and up to 15 minutes outbound in the afternoon.[9] Combined time savings could be up to 80 hours per rider per year if all riders enjoyed the maximum estimated travel time savings. Another 600+ daily riders using the I-5 Mainline HOV lane would benefit during off-peak periods when the express lanes are either closed or open.
- Both improvements would also help alleviate the west-to-east weave of the "Mercer mess" on the mainline by removing bus traffic from the GP traffic flow, and possibly removing some cars in the mainline flow from the same weave if the ramp were open to HOVs as well as buses.
- Faster, more reliable bus operations could save operating funds that could be re-allocated to other Eastside transit service.

[8] KC Metro, Automatic Passenger Counter data, Fall 1999
[9] WSDOT/HNTB, Central Seattle HOV Corridor Pre-Design Study Task Report, May 1995

Cost: $31,000,000 total[10] from new bonded revenue stream
$11,000,000 for the reversible ramp
$17,000,000 for the mainline HOV lane

[10] WSDOT/HNTB, Central Seattle HOV Corridor Pre-Design Study Task Report, May 1995

Kent and Auburn Park and Rides

Problem: Park and ride demand in Auburn and Kent is expected to grow significantly as Sound Transit's commuter rail service expands, and not enough parking is currently programmed to be available to meet potential long-term demand. Pedestrian connections to the rail platforms currently require at-grade crossings of the railroad tracks at signalized intersections.

Description: Fund additional park and ride spaces at the Auburn and Kent commuter rail parking garages, and help fund pedestrian overpass connections from the garage to the rail platforms at each station.

The drawing that follows this project description illustrates the design concept for the pedestrian bridges and parking garages that would be pursued for each station. The park-and-ride catchment area maps show the areas that would benefit from additional park-and-ride capacity, based on current demand patterns.

Benefits:

- Avoids crowded parking and spillover to adjacent neighborhoods as population, employment and transit service in Auburn and Kent grows.
- Reduces overall costs by building spaces all at once rather than more expensively retrofitting later.
- Provides a safer, faster, more convenient way for pedestrians to access the commuter rail platforms and bus hubs from the parking garages.

Cost: $6,000,000 from new bonded revenue stream
Used in partnership with funds provided by Kent and Auburn (including grants already obtained)

Seattle Center City Circulator

Problem: North downtown, South Lake Union and uptown residential and office populations are increasing and additional development is planned for these areas. This increase in populations and office uses is creating a growing transit market and employees and employers who are interested in transit options. Current transit access is not adequate for connecting these areas to the central downtown. There is a need to connect these areas to the existing and future transit services, businesses and activities in central downtown.

Description: Contribute King County funds toward a study of transit circulation options between downtown Seattle and South Lake Union. This project would examine the feasibility of and develop the initial implementation steps for a city center circulator that would connect neighborhoods in or near downtown, such as the central waterfront, south Lake Union, uptown (lower Queen Anne) and the north downtown. The project would assess routes and transit technologies and estimate ridership potential, costs, financing options and ability to support Sound Transit and Metro services. Potential impacts, costs and implementation issues would be identified.

Benefits:

- Improves connectivity of a growing urban employment area to expanded local, intercommunity and regional transit services.
- Provides technical information to support development of public-private financing partnerships.

Cost: $5,000,000 from new bonded revenue stream
To be used in combination with City of Seattle and/or private funding.

PRIORITY SERVICE INVESTMENTS

This section describes the priority service investments that would be funded by TRIP 21. Service improvements tied to bond proceeds leveraged by the TRIP 21 sales tax revenue stream would not actually be bonded, but rather would be funded by reducing the amount of sales tax proceeds used to leverage bonds in the first place.

Systemwide Bus Service Preservation and Growth

Problem: Short-term funding provided by the Washington State legislature in 2000 to "bridge" the funding gap in Metro's budget created by the reduction of the motor vehicle excise tax (MVET) revenues will run out in mid-2001. If a long-term funding source to replace the lost MVET revenues is not secured, service funding levels will drop significantly below today's levels in mid-2001 and continue at significantly lower levels for an extended period. Current estimates under a no new long-term funding scenario indicate that about 700,000 (over 20 percent) of the current annual service hours provided by Metro would have to be cut.

Description: Dedicate new sales tax revenues, replacing lost MVET revenues, to maintain current bus service levels throughout the county. Add bus service around the county between 2001 and 2006 as sales tax receipts grow.

Regular Bus Service: A 0.3 percent increase in the sales tax rate would allow Metro to maintain current service levels, and enable annual service hours in the bus system to grow by about 570,000 annual hours between 2001 and 2006, with about 160,000 of those new annual service hours available for implementation in 2001. The transit system will continue to be oriented around a multi-destination network of core, peak and local services. Priorities will include the continued emphasis on the core network of services that serve the most people through connections between major residential and activity centers, and on commuter services that mitigate traffic congestion impacts during peak periods, consistent with adopted Six-Year Plan strategies.

Paratransit Service: Use of *ACCESS Transportation*, King County Metro's federally-mandated paratransit service, will decrease from almost 1.1 million rides in 1999 to about 878,000 rides in 2006 as eligibility and service delivery policies adopted in 1999 are fully implemented. Strategies to decrease reliance on paratransit include education and training for more seniors and people with disabilities to move them to mainline public transportation systems. Feeder services will enable special needs riders to access improved multi-modal transportation facilities for more integrated travel. Additional program resources will be added to further develop the King County community transportation program to address mobility needs of people who have limited transportation options. This program will provide a range of services and products, combined with community-based coordination efforts that assist those who are able to use services that are less costly than demand-responsive paratransit for their travel.

New Services: High priorities for new service investment include, but are not limited to, the following by planning subarea. These priorities build on the Six-Year Transit Development Plan for 1996-2001, and focus on improving services with high ridership potential and on completing the core intercommunity network. They are also designed to support the priority capital investments. However, they would not use all new revenues available for service. These and additional

service investments would be made in accordance with adopted King County transit and financial policies, and would be implemented through King County's regular service planning process, including subarea input and County Council approval. Ridership estimates are by Metro staff using estimates of new service hours multiplied by conservative productivity factors at the route level. The map following this project description shows where the high priority service investments would be made.

WEST: Aurora Avenue: Improve weekday midday and off-peak direction peak service to every 15 minutes until 7 p.m. Addresses growing ridership and overloads, and completes a planned core service investment. These improvements are estimated to generate up to 1,800 additional daily riders over the 6,400 current daily riders, or another 450,000-500,000 riders per year.

Queen Anne - Capitol Hill: Improve weekday service to every 15 minutes until 7 p.m. Addresses growing ridership and completes a planned core service investment. This improvement is estimated to generate up to 500 additional daily riders beyond the 1,800 current daily riders, or another 100,000-125,000 per year.

Ambaum - Delridge - Seattle CBD: restructure service into one route, and improve weekday peak and midday service to every 15 minutes between Burien, White Center, West Seattle and downtown Seattle. Addresses growing ridership, completes a planned core service investment, and improves service efficiency. This improvement is estimated to generate up to 4,200 additional daily riders, or another 1.0-1.3 million per year.

EAST: 148th Avenue NE: New all-day 15 minute weekday service between Eastgate, Overlake and Redmond, and 30 minutes on Saturday and Sunday. Peak period extension to Issaquah Highlands. Supports growing employment along the corridor, and new employment at Issaquah Highlands. This improvement is estimated to generate up to 2,000 additional daily riders, or another 450,000-500,000 per year.

I-90 Corridor P&R Services: New and improved peak period, peak direction commuter services running every 5-15 minutes between Issaquah Highlands, Issaquah and Eastgate P&R lots, and Bellevue, Overlake and Seattle. Also adds midday service between Issaquah Highlands and Seattle, providing improved service from Issaquah, Eastgate and Mercer Island as well. Supports new Issaquah Highlands P&R and expansion at the other lots. These improvements are estimated to generate up to 3,500 additional daily riders, or another 800,000-900,000 per year. Note: a portion of this new service would be funded through the I-90 BRT project.

Redmond - Bellevue: Provide new all-day two-direction service. Provide 15 minute peak period and 30 minute off-peak service. Supports growing employment in the corridor. This improvement is estimated to generate up to 300 additional daily riders, or another 50,000-75,000 per year.

SOUTH: Auburn - Kent - SeaTac Airport: New all-day route operating every 30 minutes. Supports growing employment in the corridor, and provides and new regional connection in South County. This improvement is estimated to generate up to 1,900 additional daily riders, or another 500,000-600,000 per year.

Federal Way - Seattle: New peak period, peak direction commuter service between the new Federal Way City Center transit center/P&R and downtown Seattle, operating every 6 to 15 minutes. Supports new P&R capacity in Federal Way, and would utilize the proposed I-5/Industrial Way bus ramps. This improvement is estimated to generate up to 2,900 additional daily riders, or another 700,000-800,000 per year.

Burien - Southcenter - Renton: Improve weekday peak and midday service to every 15 minutes until 7 p.m. Supports restructure of local service around Sound Transit I-405 South express bus service and light rail, and completes a planned core service investment. This improvement is estimated to generate up to 3,800 additional daily riders, or another 1.0-1.3 million per year.

Benefits:

- Maintains existing bus service levels, and avoids significant service cuts for all areas of the county.
- Enables continued service expansion throughout the county to meet growing rider demand and to address overloads. Builds on the success of the six-year plan implementation through 1999, which exceeded plan targets for overall transit share, total system boardings, and service effectiveness, and made great progress towards achieving HOV mode split to worksites goals.
- Supports integration with Sound Transit and other public transportation services through continued bus service restructuring and enhancement.
- Supports the expansion of park-and-ride capacity by providing new service capacity to serve P&R users.
- Supports reinvestment of Metro service hours in new and improved local transit services as Sound Transit's regional express bus, commuter rail and light rail services begin and grow. Current estimates are that up to 100,000 annual service hours could be reinvested in response to express bus and commuter rail between now and 2006, and over 150,000 annual hours could be reinvested when light rail service begins in 2006. These hours are in addition to new service hours generated by TRIP 21 sales tax funding.

Cost: ~ $80,000,000 annually above current on-going revenue levels, from direct cash revenue stream from added sales tax.
(Note: this $80 M also helps support maintenance of the systemwide transit capital program)

New East King County Transit Service

Problem: Sound Transit's SR-522 regional bus service is not currently programmed to begin service until 2002, and communities along the route would like to begin using the service as early as possible.

Local traffic conditions within downtown Bellevue make local-area circulation slow and difficult for both cars and buses at certain times of day.

Description: Fund implementation of Sound Transit's SR-522 regional express bus service one year early, beginning Fall 2001 rather than Fall 2002. Sound Transit will assume full cost of the service beginning in Fall 2002. This limited-stop bus route will operate two-way, all-day service between Woodinville and Northgate on SR-522 consistent with Sound Transit's Regional Express service implementation plan, though the exact routing south of 145th Street has not yet been determined.

Provide new public transit circulator service in downtown Bellevue. The exact nature of the service to be determined in consultation with the City of Bellevue, but one concept is shown in the map following this project description. Funding would begin in Fall 2002 after Sound Transit assumes full cost of the SR-522 service.

Benefits:

- Enhances intra-Eastside transit mobility and access.
- Better connects the urban core of Bellevue to expanded regional transit services.
- Improves north King County regional service connections to Seattle, particularly for the communities of Woodinville, Bothell, Kenmore, Lake Forest Park and Shoreline.
- ST Express service in the SR-522 corridor provides additional transit capacity in a growing ridership corridor.

Cost: $47,000,000 over 25 years from new bonded revenue stream
$1,900,000 per year; enough to fund ~ 30,000 annual service hours

Financing & Schedule

Revenues

The 0.3 percent sales tax increase is projected to generate about $120 million per year in 2001 dollars. About $80 million of that amount will be used to maintain and expand current bus service and maintain capital programs at roughly the same investment levels as today. The remaining $40 million will be used to support issuance of general obligation bonds, which will allow the County to finance about $750 million of additional high priority improvements over the next 25 years.

The Executive retained Dick Conway & Associates, an experienced Northwest economic forecasting group, to develop a 10 year sales tax forecast. This forecast estimated annual increases of approximately 4.9 percent through 2010. Executive staff then extended this forecast for an additional 15 years to match the proposed financing period for capital initiatives. The forecast extension was at a rate of four (4) percent.

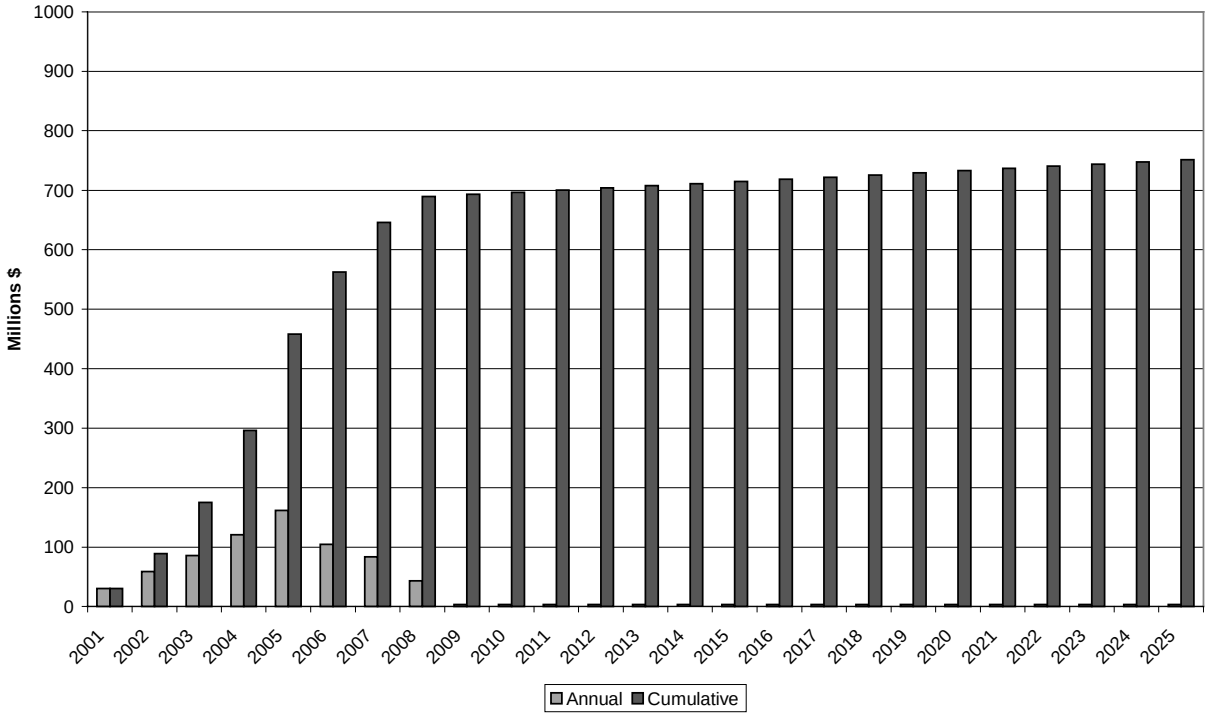
To equate the revenue forecast to a financing equivalent, a borrowing rate of 6 percent was assumed, slightly above current rates of 5.75 to 5.80 percent. Further, to account for uncertainty and likely variation in actual sales tax collections over the projected 25 year period, only 90 percent of the revenue forecast from the $40 million per year available for bonding is assumed to be available for debt service repayment ($36 million of the $40 million per year in 2001 dollars). This current dollar debt capacity for the 25 year period has a current dollar spending equivalent of approximately $815 million. This spending capacity reflects the fact that while the cost of projects will escalate with construction inflation of an estimated 3 percent, the investment and borrowing rate for funds is approximately 3 percent higher (i.e., 6 percent).

Expenditures

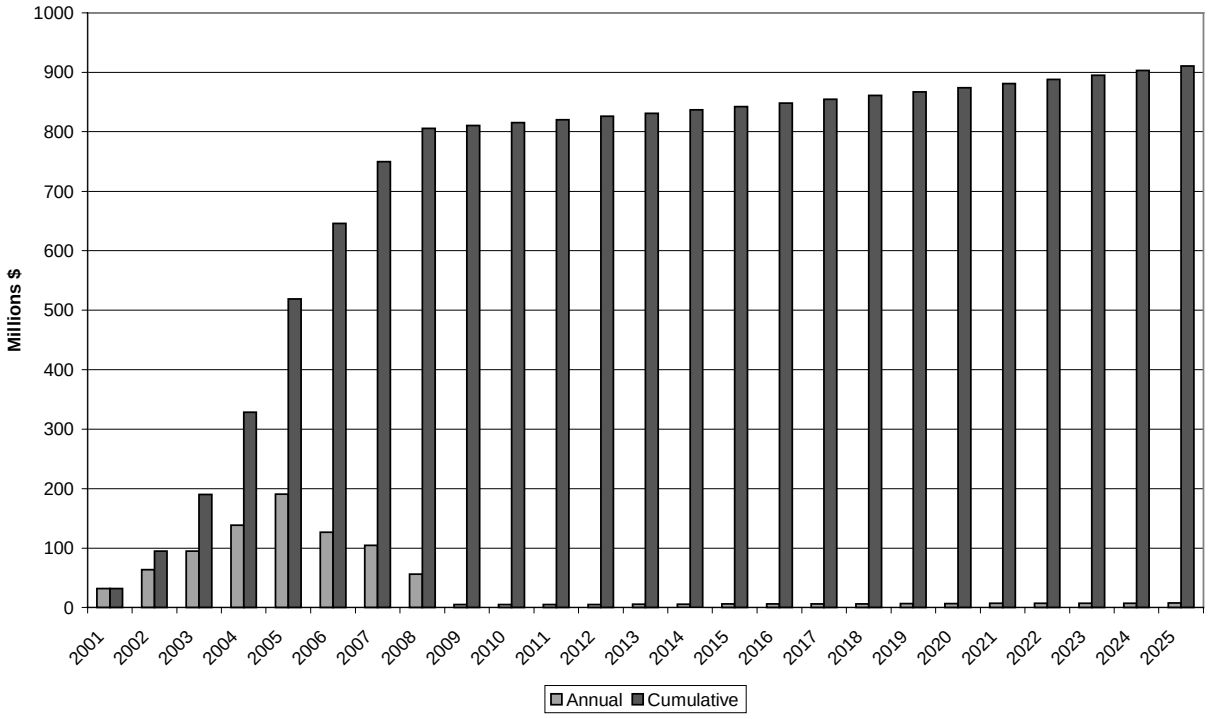
The priority capital investments that would be financed through bonds total about $751 million over the 25 year period. Systemwide capital program expenditures supported without new bonding would be maintained at roughly current levels ($879 million over the next six years) if a 0.3 percent sales tax increase were approved. Without new sales tax proceeds, the capital program would be roughly $240 million less over the next six years, since more capital funds would have to be shifted to operating to support service at lower levels than today (see Introduction discussion about potential service reduction if long-term transit funding is not secured). The size of the systemwide capital program expands and contracts with the amount of service provided, since fleet and base requirements change with service intensity.

The charts on the following pages show projected expenditure cash flow for the priority capital investments that would be financed with new bonds, in current and inflated dollars respectively. These project costs are estimated to be incurred most heavily over the first 10 years with the midpoint of spending to occur in approximately year 2006. The inflated dollar cost of these identified programs total $911 million.

Forecast TRIP 21 Bonded Cash Flow
Current Dollars



Forecast TRIP 21 Bonded Cash Flow
Inflated Dollars



Implementation Schedule

The table following this discussion shows a preliminary implementation schedule for the priority capital investments. The schedule takes in to account ties to schedules of related projects. A brief explanation of factors impacting the schedule of some of the projects follows:

I-90 BRT: tied to WSDOT and Sound Transit reconfiguration of the I-90 center roadway. Construction of the International District bus facility is tied to Sound Transit's design and construction schedule for their Central LINK light rail project. Park and ride lot construction at Issaquah Highlands is tied to completion of the South SPAR Road project, and WSDOT's Sunset Interchange project. Park and ride expansion at Mercer Island is tied to Sound Transit's park and ride expansion at the same lot.

I5/SR-520 Transit Ramp: tied to WSDOT's schedule for completion and record of decision for the Trans-Lake Washington Study.

Northgate and Southcenter LINK: tied to Sound Transit's Central LINK light rail project.